Educational Challenges in Guatemala and Consequences for Human Capital and Development

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In terms of human capital, Guatemala lags behind in an increasingly global economy.[1] In its Human Capital Index, the World Economic Forum ranked Guatemala as number 94 out of 130 economies. Although a multifaceted concept, education has a significant role in building human capital. Education enrollment, quality and attainment impacts the future of the labor force.

Education in Guatemala has become increasingly accessible, with greater coverage. However, low levels of literacy, attainment and retention remain fundamental problems. Further, the country exhibits great disparities between urban and rural populations, among indigenous and Ladino groups, and between male and female students.

These challenges have negative impacts in terms of the country's human capital. Specifically,
   a. Two in ten Guatemalans are illiterate;
   b. Half of the population has only a primary education, and demonstrate difficulty doing multiplication problems and writing short sentences;
   c. One fifth are able to attend secondary school, but have only remedial knowledge of algebra or composition, and, at most, are able to multiply;
   d. Less than a tenth of the labor force holds a university degree or higher.

Very low levels of human capital have important implications for economic growth, wages and the presence of a significant informal sector.

In this article, we review the educational landscape in Guatemala, including literacy, K-12 education[2], and workforce development.

A typical school in San Juan Ostuncalco, Quetzaltenango (Photo by Julia Yansura).

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[1] Human capital is understood here as the capacity of the population to drive economic growth (World Economic Forum, "Index Structure," *Human Capital Report 2016,* http://reports.weforum.org/human-capital-report-2016/technical-notes/).

[2] K-12 is a term used to integrate the levels of Primary and Secondary education.

I. Educational Landscape: Literacy

Less than 30 years ago, in 1986, more than half of the Guatemalan population (52%) was illiterate. That year, President Vinicio Cerezo established a decentralized educational system and granted more autonomy to departments and schools themselves. The constitutional reforms of that period also extended compulsory education to the 9th grade (or third *básico*) and made curricular changes to integrate intercultural and gender-related content.[3] Today, the General Office of Bilingual Education (DIGEBI) works in more than 1,400 schools covering 14 different linguistic groups.

In turn, Guatemala has experienced improvements in literacy (Figure A in Annex). However, Guatemala still ranks among the lowest in literacy. In 2014, for example, 19% of the adult population (15 years and older) was illiterate, compared to 7% in the Latin America and Caribbean region as a whole.[4]

However, the process of inclusion is far from complete and illiteracy rates are highest among women, and indigenous women in particular (Figure 1). For example, 74% of the female population is literate, compared to 85% of the male population (Figure A in Annex), and in 2011, the difference in literacy rates between indigenous and non-indigenous women was close to 30 percentage points (Figure 1).

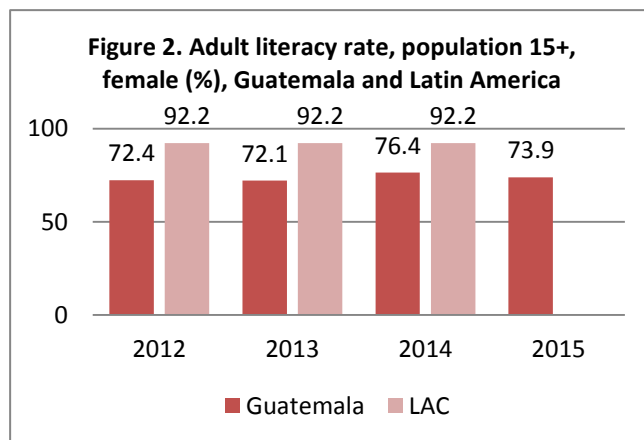| Figure 1. Literacy Rate by Sex, Ethnicity and Age Group, 2011		
Sex	**Indigenous**	**Non-Indigenous**
Population 15 years and older		
Men	74.6	88.9
Women	51.9	81.1
Population ages 15-24		
Men	90.9	95.3
Women	80.9	93.3
Source: INE, *Caracterización: Rep. de Guatemala,* 2011.		

But the gap is even more striking when comparing Guatemala's women to female populations across the region, where 8% of the women are illiterate compared to 24% in Guatemala (Figure 2).

Among the challenges to increase literacy rates are educational coverage (particularly in rural areas), low rates of retention (particularly at pre-school and primary school level), internal migration, linguistic diversity, and limited data on the subject, particularly in terms of the national census.[5]

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[3] Spanish-Maya bilingual education, for example, was the preferred mode of instruction in schools located in the predominantly indigenous areas.
[4] Analysis of World Bank's Education statistics, available at http://datatopics.worldbank.org/education/wDataQuery/QFull.aspx.
[5] Mike Castillo, "Falta de cobertura afecta alfabetización," *Prensa Libre,* December 9, 2014.

Figure 2. Adult literacy rate, population 15+, female (%), Guatemala and Latin America

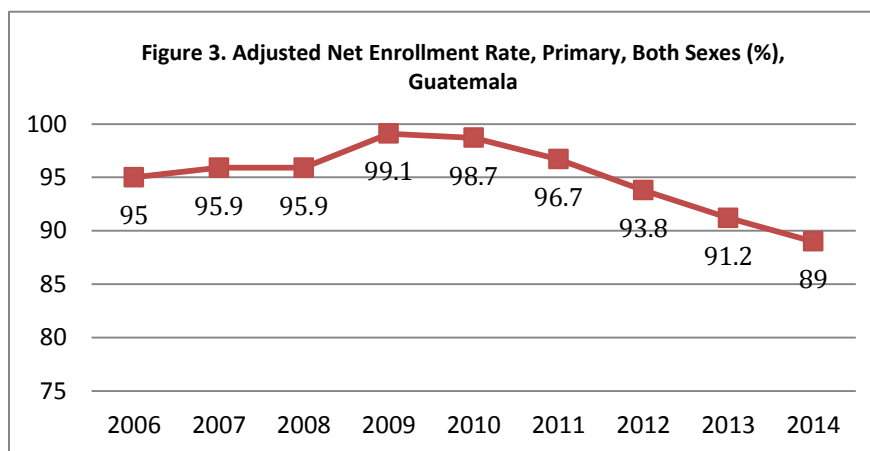|	2012	2013	2014	2015
Guatemala	72.4	72.1	76.4	73.9
LAC	92.2	92.2	92.2	

■ Guatemala ■ LAC

Source: World Data Bank, Education Statistics.

Primary Education

Coverage

As with literacy rates, Guatemala has improved its educational coverage in the past decades. Since the Peace Accords of 1996, all administrations have supported the expansion of primary schools and since 2006, net enrollment rate at this level has averaged 95%. In fact, Guatemala was close to achieving universal coverage in 2009, when the net enrollment rate at the primary level was 99%.

Since that year, however, Guatemala experienced a slight setback (Figure 3). The reasons behind such a drop require further analysis of factors such as migration, demographic elements, the lack of a national census, and the impact of social programs.[6]

Figure 3. Adjusted Net Enrollment Rate, Primary, Both Sexes (%), Guatemala

2006	2007	2008	2009	2010	2011	2012	2013	2014
95	95.9	95.9	99.1	98.7	96.7	93.8	91.2	89

Source: World Data Bank, Education Statistics.

But overall, the country has made significant progress in the expansion of educational offerings, and, at the beginning of the 21st century, the increase in primary net enrollment surpassed that of the population growth.[7]

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[6] See Verónica Spross de Rivera and Margarita Abascal, *Guatemala: El efecto de las políticas públicas docentes,* Inter-American Dialogue/CIEN, 2015. http://www.thedialogue.org/wp-content/uploads/2015/06/FINALPol%C3%ADticasDocentesGuatemala.pdf
[7] UNESCO-OREALC, *Balance de los 20 años del Proyecto Principal de Educación en América Latina y el Caribe,* Santiago de Chile, UNESCO, 2001. http://unesdoc.unesco.org/images/0013/001354/135468s.pdf

Quality & Performance

Despite the relative progress in coverage, education quality remains a pressing issue. According to 2014 Ministry of Education data, only 40% and 44% of sixth-graders reach national standards in Reading and Mathematics, respectively (Figure 4). Regionally, Guatemalan sixth graders also fare worse than their counterparts, according to UNESCO's annual examination (TERCE) of 15 Latin American countries.[8] The results of the test are summarized in Figure 5.
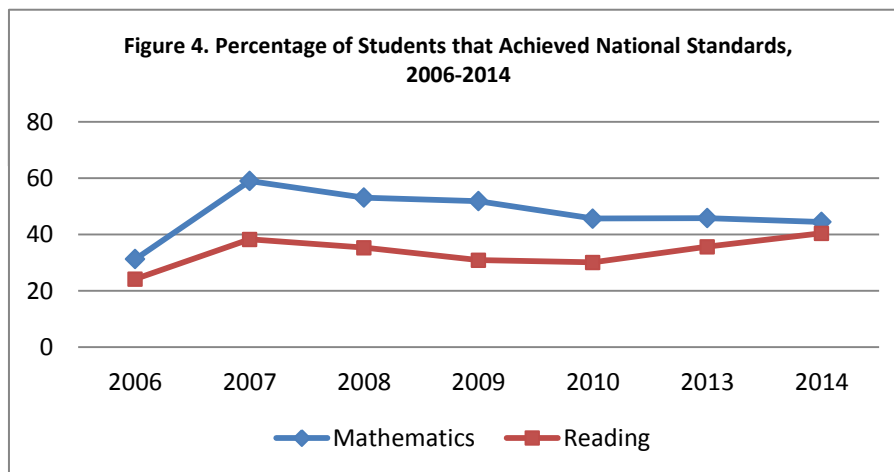
Figure 4. Percentage of Students that Achieved National Standards, 2006-2014

Source: Guatemala's Ministry of Education, General Office of Evaluation and Educational Research (DIGEDUCA), *Informe departamental y municipal de primaria, 2014.*

In turn, low performance in primary education becomes a bottleneck for access to secondary education. According to UNESCO's diagnosis, poor performance in education at this stage is linked to factors such as the socioeconomic context, grade repetition,[9] access to preschool education between ages 4 and 6, attendance, and dropout.

Furthermore, although revealing in themselves, national statistics do not provide a comprehensive overview of the primary sector. Educational gaps and inequities are substantial across the country, with disparities along urban/rural, indigenous/non-indigenous, and male/female populations, all of which are reflective of Guatemala's long history of socioeconomic inequality.

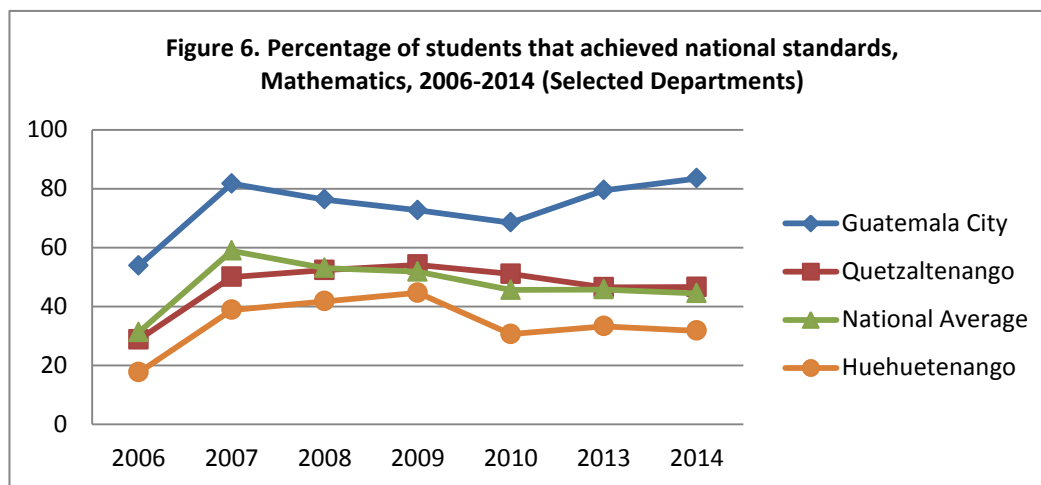| Figure 5. Results of the 2015 TERCE Study by UNESCO (6th graders)			
	Guatemala	Regional Average	Guatemala Ranking
Reading	678	700	11
Mathematics	672	700	11
Natural Sciences	684	700	11
Writing	3.29	3.19	5

Source: UNESCO, *Tercer Estudio Regional Comparativo y Explicativo (TERCE): Informe de Resultados,* July 2015.

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[8] TERCE, or the "Third Regional, Comparative and Explanatory Study" is conducted by UNESCO on a yearly basis. The study applies a standardized test to evaluate the performance of students at the primary education level in 15 countries of Latin America and one state in Mexico (Nuevo León).

[9] Interestingly, according to UNESCO, grade repetition (the mechanism to remediate the setbacks in the learning process) is the second most important variable affecting academic achievement. (See UNESCO, *Informe de Resultados. Terce: Factores Asociados,* July 2015). http://unesdoc.unesco.org/images/0024/002435/243532S.pdf

Equity

The first signs of inequity can be seen at the urban/rural level. Sixth graders in the capital city have consistently reached the highest standards in both Reading and Mathematics, with almost 50 percentage points of difference between Guatemala City and the department of Huehuetenango, for example (Figure 6). In terms of Reading, national standards were also higher among urban than rural students (14% versus 7% at a national level).

Figure 6. Percentage of students that achieved national standards, Mathematics, 2006-2014 (Selected Departments)

Source: Guatemala's Ministry of Education, General Office of Evaluation and Educational Research (DIGEDUCA), *Informe departamental y municipal de primaria, 2014.*

Finally, there are significant disparities among girls and boys, and indigenous and non-indigenous populations, but these inequities will be explained with more detail in the next section.

Secondary Education

Coverage

Progress in primary education coverage has not been matched in secondary education, and as mentioned above, may be attributed to poor attainment.

In 2014, less than half of the children in this age-range were enrolled in a lower-secondary institution (the equivalent of middle school), and only a fourth was enrolled at the upper secondary level (the equivalent of high school)[10] (See Figure 7).

Figure 7. Adjusted net enrollment rate (%) 2008-2014
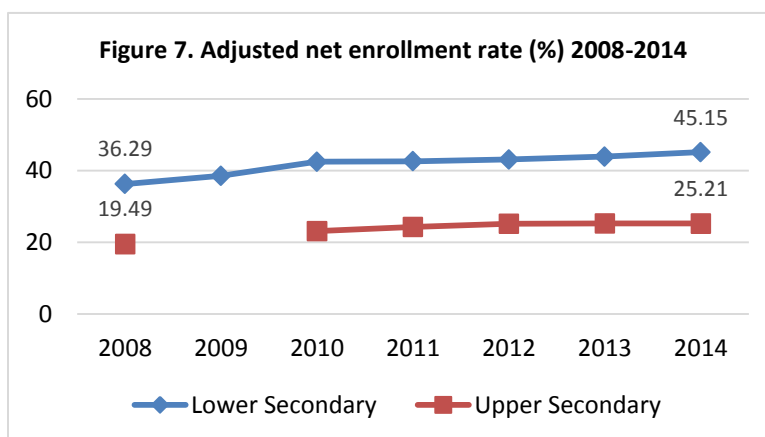
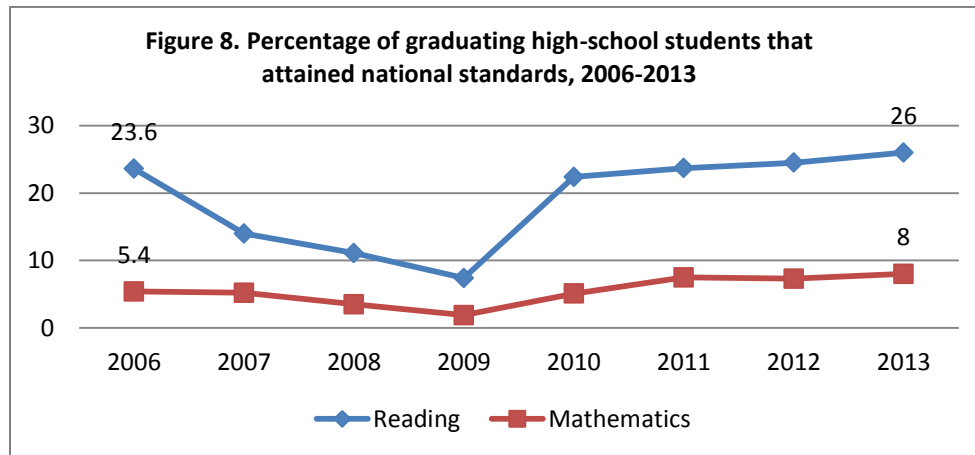Source: UNESCO, Institue for Stadistics (UIS)

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[10] In Guatemala, Primary education is mandatory for children ages 7 to 14, and comprises six grades; Lower secondary education (called *Básico*) comprises three grades and is the equivalent of Middle School; Upper Secondary Education (*Ciclo Diversificado*) is the equivalent of high school and comprises two or three grades depending on the area.

According to the World Bank, there are three main factors affecting the net enrollment rate at the secondary level: the lack of continuity between primary and secondary sectors, the limited number of public institutions offering this type of education, and the high cost of attending secondary school, particularly private schools.[11] Further, gender-based inequality is accentuated at this stage: early marriage, teenage pregnancy and the need to assist the family affect girls disproportionately in this age range.[12]

Quality/Performance

Furthermore, the performance of students at the secondary level reveals lower rates than in the primary level, with 8% and 26% of graduating high-school students reaching national standards in Mathematics and Reading, respectively (Figure 8).

Figure 8. Percentage of graduating high-school students that attained national standards, 2006-2013

Source: Guatemala's Ministry of Education, General Office of Evaluation and Educational Research (DIGEDUCA), *Informe departamental y municipal de Graduandos, 2013.*

Equity

Just like in primary education, results vary greatly by department and also along gender and ethnic lines. First, performance in the secondary level is highest among men in urban areas (Figure 9).

Figure 9. Achievement in Mathematics and Reading by Gender and Area, 2013 % of Students in 9th Grade that Reached National Standards					
Department	Percentage	Gender		Area	
		Feminine	Masculine	Urban	Rural
MATHEMATICS					
Guatemala and Guatemala City	27.53	23.70	31.36	25.56	22.36
READING					
Guatemala and Guatemala City	26.96	25.94	27.99	28.02	21.72
Source: Guatemala's Ministry of Education, General Office of Evaluation and Educational Research (DIGEDUCA), *Anuario de Resultados.*					

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[11] According to a 2006 household survey, 62% of people cited economic factors as the main reason to drop out of secondary school. (See World Bank, *Mejores Empleos en Guatemala. El Rol del Capital Humano,* Washington DC, World Bank, 2011). http://siteresources.worldbank.org/GUATEMALAINSPANISHEXT/Resources/Mejores_empleos_en_Guatemala__Banco_Mundial.pdf
[12] Sergio Martinic, "Educational progress and problems in Guatemala, Honduras and Mexico", *Background paper prepared for the Education for All Global Monitoring Report 2003/4,* UNESCO, 2003. http://unesdoc.unesco.org/images/0014/001468/146805e.pdf

Second, indigenous populations exhibit lower performance rates compared to non-indigenous populations. On average, 14% of indigenous students achieve national standards in Mathematics, compared to 30% of Ladino students. Similarly, in Reading, 9% of indigenous students reach national standards compared to 31% of Ladino students (Figure 10). Moreover, not only do indigenous people face lower levels of educational attainment, they also gain lower returns for each year of schooling attained, due to discrimination in access to jobs and wages, longer periods of unemployment and lower quality of education.[13]
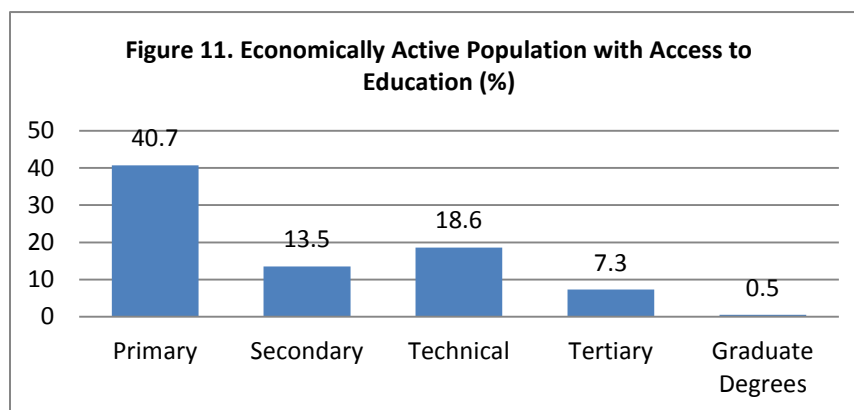
Figure 10. Achievement in Mathematics and Reading by Ethnicity, 2013 % of Students in 9th Grade that Reached National Standards						
Department	**Percentage**	**Ethnicity**				
		Ladino	Mayan	Xinka	Garífuna	Average non-Ladino
MATHEMATICS						
Guatemala and Guatemala City	27.53	30.48	16.81	11.76	13.13	13.9
READING						
Guatemala and Guatemala City	26.96	31.26	11.41	5.88	9.44	8.91
Source: Guatemala's Ministry of Education, General Office of Evaluation and Educational Research (DIGEDUCA), *Anuario de Resultados.*						

Higher Education

Naturally, performance at the primary and secondary sectors is reflected at the higher education level. The admission process to the only public university in Guatemala, *Universidad San Carlos,* is based on applicants' holdings of the high school diploma and knowledge of Spanish.

The disparities at early levels, thus, have an impact on the last stage of education, as evidenced by access to education among the economically active population (Figure 11), which is reduced significantly at the tertiary level. In fact, enrollment in tertiary education is relatively low compared to the population and the 15-24 age range.

Figure 11. Economically Active Population with Access to Education (%)

Primary 40.7, Secondary 13.5, Technical 18.6, Tertiary 7.3, Graduate Degrees 0.5

Source: Duriez and Obregón, *Educación Superior en Iberoamérica. Informe Nacional: Guatemala,* March 2016.

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[13] Kelly Hallman Sara Peracca *et al, "*Indigenous girls in Guatemala: Poverty and Location," in Maureen Lewis and Marlaine Lockheed (eds.), *Gender and Schooling: Case Studies from the Developing World,* Washington DC, Center for Global Development, 2007, pp. 145-176.

Figure 12. Annual Evolution of Enrollment at the Tertiary Level					
2010	2011	2012	2013	2014	2015
233,333	250,543	264,045	297,784	176,973	186,852

Source: Duriez and Obregón, *Educación Superior en Iberoamérica. Informe Nacional: Guatemala,* March 2016.

II.   Education, Human Capital and Development

The educational landscape presented thus far has important implications for development. As stated earlier, education has significant consequences for the composition and skills of the labor force, the ultimate driver of economic growth. Further, education provides the necessary skills to access high-quality jobs and reduce inequality, and particular sectors, such as science and technology, promote innovation and the development of new technologies.

Figure 13: Economic and Labor Force Indicators, Guatemala

| Indicator		Guatemala (2006-2013)
Labor force participation rate	Male	88.2%
	Female	44.7%
Poverty	Living on less than $4 a day	63%
Agriculture	Value added (% GDP)	11%
	Labor force (% GDP)	32%
Formality, by Sector	Formal	32.3%
	Informal	65.7%
Highest level of education attained, by % labor force	None	23.2%
	Some primary	30.1%
	Complete primary	11.1%
	Some secondary	12.5%
	Complete Secondary	16.3%
	Higher Education	6.5%

Source: Working to End Poverty in Latin America and the Caribbean: Workers, Jobs and Wages: World Bank, https://goo.gl/6OoJtQ. ILO, Evolución de los principales indicadores del Mercado de trabajo en Centroamérica y República Dominicana, 2006-2010. 2011.

Among the most important implications of an inadequate human capital, we can cite:

Unskilled Labor Force

The net enrollment rates at different stages of education decrease progressively. The effect of this 'educational bottleneck' is that the stock of Guatemala's human capital is highly concentrated in the primary education sector or below, which is also reflected on the composition of its labor force. In 2013, for example, only 7% of Guatemala's labor force had more than 12 years of schooling, the average period of education that reduces the risk of being poor, according to CEPAL.[14]

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[14] Cited in Programa Estado de la Nación en Desarrollo Humano Sostenible (Costa Rica), *Quinto Informe Estado de la Región/PEN CONARE,* San José, PEN, 2016.

Figure 14. Labor Force with Primary, Secondary and Tertiary Education (as % of Total), 2010-2013
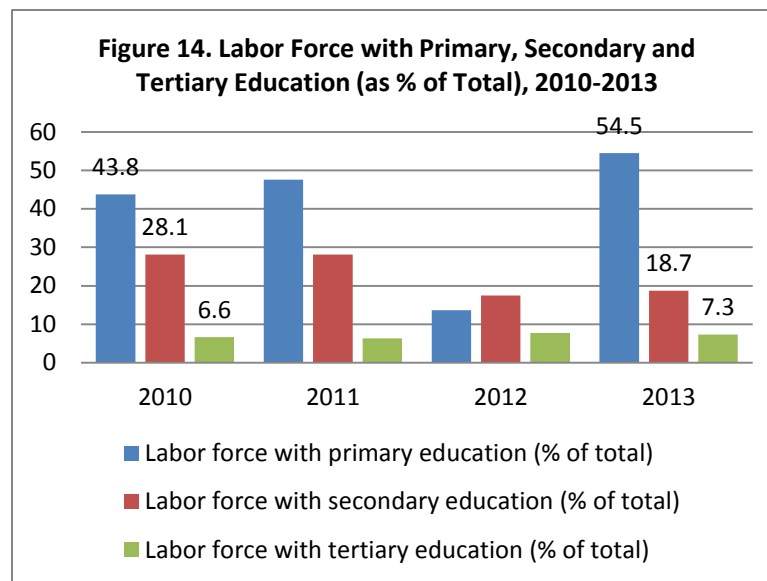
Source: Index Mundi

Low Innovation, Low Wages

Guatemala's production relies on labor-intensive activities such as agriculture, economic enclaves in the *maquila* industry, tourism and informal economic activities. More than 50% of its GDP derives from these activities.

Moreover, according to the World Bank, Guatemala's exports' structure has not been essentially modified in the past ten years. This reflects a lack of innovation in commercial activity and the country's ineffectiveness to export products with high technological and aggregated content.[15] As a consequence, the jobs in Guatemala, predominantly oriented to the agriculture or manufacture sector, yield low wages and will hinder the country's ability to compete in the global economy.

Growing Inequality

Limited access to education among rural and indigenous populations at all levels, and the differences in learning outcomes reinforce and reproduce the patterns of socio economic inequality. As long as these inequities persist, economic growth in the country will not benefit the majority of the population.

Migration

According to the IOM, one of the most important effects of migratory processes can be seen in the educational landscape. Migration affects education in at least two ways: retention and achievement. On the one hand, remittances to Guatemala increase the disposable income of families and, thus, tend to increase educational access for thousands of children.

For instance, according to a 2010 study by IOM, illiteracy is lower among the population that receives remittances than the national average. Data from a 2016 survey by Borge & Asociados

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[15] In Guatemala, more than 75% of export products have a low and medium-low technological content, compared to Costa Rica's 45%. (See World Bank, *Mejores Empleos en Guatemala. El Rol del Capital Humano,* Washington DC, World Bank, 2011).

confirms this trend: 1.7% of remittance recipients in Guatemala reported having no education compared with 7.2% of non-recipients.[16]

On the other hand, emigration or the possibility of emigrating is one of the leading causes of dropping out of school, particularly among youth between 16 and 18 years of age.[17]

Guatemala's population is predominantly young. In 2014, 69% of Guatemala's population was less than 30 years old. This group poses additional pressure to the labor market, since, according to the World Bank, the economy would have to grow 3% annually in order to maintain the stability of the labor market. In an increasingly difficult context to emigrate, Guatemala will keep experiencing pressure in the domestic market and growing rates of internal and external migration if most sectors do not experience growth in productivity and capacity.[18]

Guatemalan Highlands. Photo by: Julia Yansura

[16] Note that the variable "no education" is not the same as illiteracy. Survey includes 1019 respondents 18 years and older. (See Borge & Asociados, *Encuesta Nacional de Opinión Pública. Septiembre 2016: Guatemala,* "Ficha técnica", available at: http://borgeyasociados.com/wp-content/uploads/2016/11/Borge-Encuesta-Nacional-de-OMNIBUS-Guatemala-Setiembre-2016.pdf).

[17] *Loc. Cit.*

[18] World Bank, *Op. cit.*

Annex

Figure A. Adult literacy rate, female and male population in Guatemala (%)
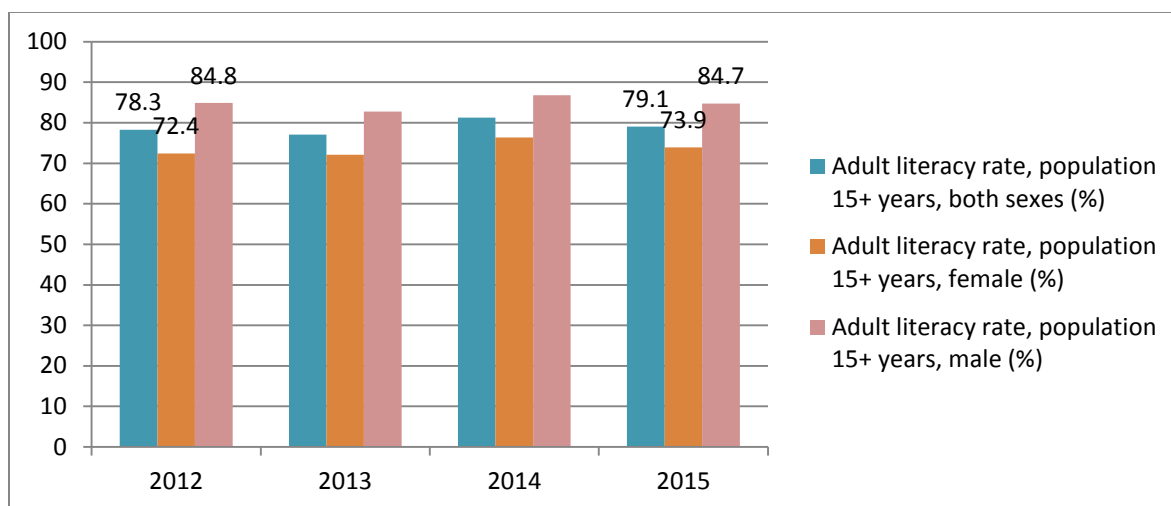
Source: World Bank's Education statistics, available at
http://datatopics.worldbank.org/education/wDataQuery/QFull.aspx

Figure B. Percentage of Attainment in Reading by Department, Upper School Level (2006-2015)

|	2008	2009	2010	2011	2012	2013	2014	2015
Guatemala	22.0%	14.9%	35.9%	36.0%	36.1%	40.0%	37.8%	37.8%
Sacatepéquez	13.0%	8.0%	31.3%	35.4%	33.3%	35.1%	36.9%	36.5%
Capital	18.3%	11.8%	32.5%	33.5%	34.6%	37.9%	36.9%	35.3%
Chimaltenango	8.0%	4.5%	20.3%	23.8%	23.7%	27.7%	28.8%	33.2%
Quetzaltenango	9.3%	5.7%	20.1%	22.6%	23.0%	25.3%	25.9%	26.1%
Chiquimula	6.5%	5.5%	21.9%	23.3%	21.7%	24.1%	28.0%	26.0%
National Average	11.1%	7.4%	22.4%	23.7%	24.5%	26.0%	26.0%	26.0%
Zacapa	6.2%	4.0%	16.0%	17.8%	19.7%	18.3%	22.7%	20.8%
El Progreso	5.5%	3.5%	14.6%	18.0%	18.0%	18.5%	21.6%	20.1%
Huehuetenango	6.7%	4.3%	15.9%	17.2%	18.9%	21.8%	19.8%	19.6%
Jalapa	4.8%	2.4%	13.5%	18.0%	19.4%	18.8%	21.8%	19.5%
Alta Verapaz	7.8%	5.2%	16.6%	17.1%	18.0%	17.7%	18.9%	19.0%
Izabal	3.9%	4.9%	16.5%	18.2%	18.5%	19.1%	21.2%	18.1%
Santa Rosa	3.4%	2.8%	13.5%	16.6%	16.4%	17.2%	20.3%	17.9%
Retalhuleu	5.3%	4.1%	14.9%	15.7%	16.8%	18.7%	19.9%	17.8%
Escuintla	4.3%	3.5%	15.0%	15.8%	17.0%	17.2%	19.7%	17.7%
Totonicapán	3.7%	1.0%	11.6%	11.2%	13.2%	13.8%	17.3%	17.6%
Suchitepéquez	4.2%	3.9%	14.5%	15.1%	17.1%	17.0%	19.3%	17.2%
Baja Verapaz	4.9%	3.0%	12.4%	15.6%	19.8%	18.1%	19.0%	16.5%
Petén	3.2%	2.3%	13.0%	14.8%	15.9%	15.0%	18.4%	16.4%
San Marcos	3.7%	3.5%	10.4%	12.2%	14.1%	15.3%	16.4%	16.3%
Jutiapa	4.8%	3.6%	13.0%	14.3%	15.4%	17.5%	18.4%	16.0%
Sololá	3.8%	3.2%	11.1%	13.3%	14.3%	13.8%	14.4%	15.4%
Quiché	4.5%	2.0%	11.2%	12.5%	12.5%	13.6%	13.8%	14.2%

Source: Guatemala's Ministry of Education, General Office of Evaluation and Educational Research (DIGEDUCA), *Informe departamental y municipal de Graduandos, 2013*

Figure C. Percentage Attainment in Mathematics by Department, Upper School Level (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Guatemala	12.1%	10.3%	8.2%	5.6%	11.0%	13.8%	13.2%	15.1%	14.5%	14.0%
Ciudad Capital	8.1%	7.6%	6.2%	3.5%	8.9%	12.4%	12.0%	13.2%	14.5%	13.5%
Chimaltenango	2.0%	2.0%	1.1%	0.7%	3.4%	6.9%	7.7%	9.4%	10.4%	11.0%
Sacatepéquez	3.4%	4.3%	2.0%	1.2%	5.3%	9.6%	9.2%	9.1%	10.5%	9.7%
Quetzaltenango	3.4%	4.8%	3.3%	1.2%	4.0%	6.9%	6.2%	8.2%	9.2%	9.1%
National Average	5.4%	5.2%	3.5%	2.0%	5.1%	7.5%	7.3%	8.0%	8.5%	8.5%
Escuintla	14.3%	6.8%	2.3%	1.0%	4.3%	4.3%	4.2%	5.8%	7.7%	7.6%
Huehuetenango	2.2%	6.1%	1.5%	1.8%	3.2%	5.7%	6.6%	7.6%	7.1%	7.0%
Chiquimula	1.6%	2.9%	1.5%	0.4%	2.5%	5.4%	5.0%	5.1%	6.9%	6.6%
El Progreso	1.9%	2.2%	1.5%	0.4%	3.1%	3.8%	4.2%	5.9%	5.8%	5.4%
San Marcos	1.9%	2.3%	1.0%	0.4%	2.2%	3.3%	3.4%	4.0%	4.1%	5.1%
Retalhuleu	3.4%	1.8%	1.4%	0.6%	1.5%	4.1%	3.0%	4.6%	6.3%	5.1%
Totonicapán	1.8%	0.6%	0.4%	0.0%	1.2%	3.0%	3.5%	3.8%	5.3%	5.0%
Alta Verapaz	3.8%	2.9%	1.7%	0.7%	2.6%	4.6%	4.0%	4.1%	4.7%	4.7%
Baja Verapaz	0.9%	2.3%	1.1%	0.5%	1.6%	3.0%	3.8%	3.1%	3.9%	4.6%
Sololá	1.3%	0.9%	0.8%	0.2%	1.0%	2.6%	3.9%	3.4%	4.5%	4.6%
Suchitepéquez	1.9%	2.5%	0.7%	0.2%	1.5%	3.1%	3.7%	3.9%	4.4%	3.8%
Quiché	0.6%	1.1%	0.6%	0.5%	2.1%	4.3%	3.3%	2.7%	2.8%	3.5%
Zacapa	1.0%	1.5%	0.5%	0.1%	1.5%	3.2%	3.0%	2.7%	3.2%	3.4%
Jalapa	2.0%	1.5%	0.7%	0.3%	0.9%	2.6%	3.3%	3.2%	3.8%	3.0%
Santa Rosa	1.8%	1.7%	0.6%	0.2%	0.9%	2.7%	2.5%	2.6%	2.8%	2.8%
Izabal	1.3%	3.3%	0.7%	0.3%	1.2%	3.6%	3.3%	2.9%	4.4%	2.6%
Petén	1.8%	1.9%	0.6%	0.2%	1.0%	2.8%	2.6%	2.3%	2.9%	2.4%
Jutiapa	1.3%	1.2%	0.9%	0.1%	0.6%	1.7%	2.4%	2.2%	2.3%	2.1%

Source: Guatemala's Ministry of Education, General Office of Evaluation and Educational Research (DIGEDUCA), *Informe departamental y municipal de Graduandos, 2013*

Figure D. Indigenous students enrolled at primary, lower secondary and upper secondary level as percentage of total students enrolled
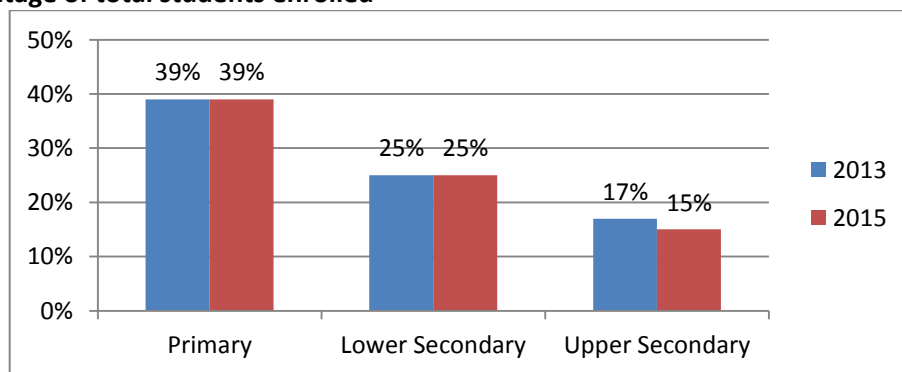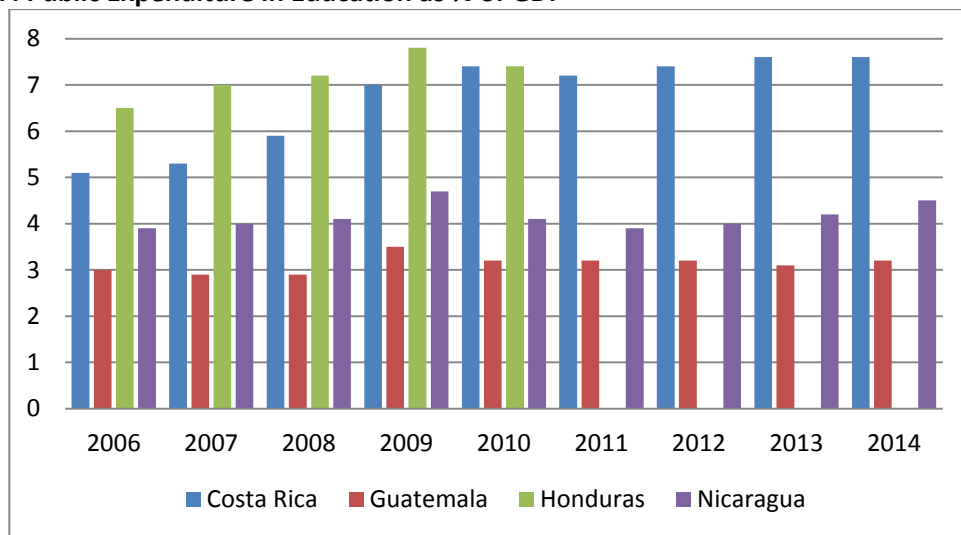

Source: Guatemalan Ministry of Education, Yearbook of Education Statistics 2015

Figure E. Annual Evolution of Enrollment by Sex and Area, 2013

Area	Male	Female
Social Sciences	98,155	103,396
Science and Technology	19,997	21,064
Medical Sciences	8,702	9,165
Humanities	21,372	22,511
Agriculture Sciences	1,527	4,434
Natural and Exact Sciences	1,527	1,607
Subtotal	151,280	162,177
Total	313,457	

Source: Instituto Nacional de Estadística y Sistema de Información Universitaria de la Coordinadora General de Planificación USAC.

Figure F. Public Expenditure in Education as % of GDP

Source: UNESCO, Institue for Stadistics (UIS), available at
http://data.uis.unesco.org/?queryid=181